PROJECT NUMBER: 2307
PROJECT TITLE: Flavor Investigation/Nonvolatile Flavor Investigation/Processed Tobacco
PROJECT LEADER: W. R. Raymond
PERIOD COVERED: June, 1988

I. FLAVOR INVESTIGATION:

A. Objective:
To provide analytical support for activities related to development and application of flavoring materials.

B. Results:

1. Marlboro POL's--Flavor analyses were completed for the second Stockton Street rerun of cigarettes for POL 3584 and 3585. Analytical results are being evaluated and will be compared with those from the previous two runs. Glycyrrhizic acid content of block licorice used for Run #3 was determined for the first time.

2. Project ART--Work continued to characterize compositionally the neutral fraction from a dichloromethane extract of ART filler. Complexity of the fraction has required additional subcutting and workup to remove high boiling constituents and provide simplier mixtures for GC and GCMS analysis. Constituent identifications by GCMS continue.

   A sample of stem from ART pilot run #140 was extracted and analyzed by GC. Qualitatively, stem extract composition appeared to be very similar to that of filler extracts previously examined.

3. Applied Flavor Investigation--Preliminary plug space and rod placement subjective evaluations of yeast-encapsulated peppermint oil and several encapsulated flavors provided by G.F. yielded some interesting results. Analyses are in progress to determine flavor loading levels in these materials. Further subjective and analytical studies are planned.

4. Project Trim--Stability analyses were continued for 8 Trim flavor system prototypes. A production sample of Trim A/C from LVL also was profiled by GC for comparison with a laboratory formulation base profile.

5. Miscellaneous--Forty one natural flavor compounds were analyzed for purity and major impurities were identified where possible. Stability analyses were continued for two flavor compounds being evaluated for Project Extra. Samples of Brazilian and Chinese menthol were compared by GC.

   GC profiles have been generated for 46 essential oils and GCMS spectra of identified components have been incorporated into Flavor Development's MS library.

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II. NONVOLATILE FLAVOR INVESTIGATION:

A. Objective: To investigate tobacco-natural, tobacco-identical and other nonvolatile fractions and constituents for potential application as cigarette flavor additives.

B. Results:

A second round of subjective testing is underway with several Bright tobacco carbon fraction subcuts prepared by S. Tafur to evaluate these materials at higher levels and confirm initial subjective results.

III. PROCESSED TOBACCO:

A. Objective: To develop basic and applied knowledge for the purpose of improvement or selective modification of subjective properties of processed tobaccos.

B. Results:

1. RLB Dry Flavor Replacement--Solid and native roasted St. Johns Bread extracts obtained from a new vendor were analyzed for sugar content and found to be comparable to the most promising prior vendor submission. A second alternate vendor has been identified and samples requested for evaluation. Potential timing and nature of dry flavor replacement production trials have been discussed with Park 500 management.

2. ART Stem--Initial subjective evaluations of small scale cigarettes with post ART stem (25-50% potassium citrate reduction) tended to confirm earlier results. The lowest citrate level (8%) stem replacing ESB-2 in Marlboro was slightly less different from control Marlboro than stem containing either 12% or 15-17% citrate. Further evaluations are in progress with 8% citrate stem replacing ESB-2 and to determine whether 12% citrate stem can be directly utilized for replacement of ES only. Preliminary evaluations of reduced citrate post ART stems in RL's indicated promise for replacement of 1/6 to 1/3 of Bright stem. Current trials with citric acid on stem showed subjective potential at lower levels. Use of citric acid also has proven effective in reducing both AB levels and extraction time (M/M).

3. IS versus ES--A remake of POL 3554 testing 5% ISB-2 in Marlboro was released and shipped. The close-out date is July 25. POL testing of uncased ES from LVL production has been requested.

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